

 <p>United States Environmental Protection Agency Washington, DC 20460</p> <p>Interagency Agreement/ Amendment</p> <p>Part 1 - General Information</p>		1. EPA IA Identification Number DW-96-95846801 - 0		2. Funding Location by Region EPA R5					
		3. Other Agency IA ID Number (if known)		4. Awarding Office IASSC West					
		5. Type of Action New		6. IA Specialist: Kathy Tsing-Choy 206-553-4688 Tsing-Choy.Kathy@epa.gov					
7. Name and Address of EPA Organization US Environmental Protection Agency IASSC West 1200 Sixth Avenue, Suite 900, OMP-145 Seattle, WA 98101			8. Name and Address of Other Agency U.S. Army Corps of Engineers Great Lakes and Ohio River Division 550 Main Street Cincinnati, OH 45202						
9. DUNS: 029128894		10. BETC: DISB		11. DUNS: 039336271					
				12. BETC: COLL					
13. Project Title and Description Great Lakes Restoration Initiative Implementation FY13 - USACE Implement priority programs, projects and activities to protect, restore and maintain the Great Lakes ecosystem in support of the Great Lakes Restoration Initiative (GLRI) Action Plan.									
14. EPA Project Officer (Name, Address, Telephone Number) MaryBeth Giancarlo 77 West Jackson Blvd. (G-17J) Chicago, IL 60604-3507 312-886-2253 E-Mail: Giancarlo.MaryBeth@epa.gov FAX: 312-692-2119			15. Other Agency Project Officer (Name, Address, Telephone) Jan Miller 231 S. LaSalle Street Chicago, IL 60604 312-846-5347 E-Mail: jan.a.miller@uasce.army.mil FAX: 312-353-5439						
16. Project Period: 08/21/2013 to 09/30/2019			17. Budget Period: 08/21/2013 to 09/30/2019						
18. Scope of Work (See Attachment) SCOPE OF WORK "ATTACHMENT A" IS ATTACHED Indirect costs include project-based costs and program-based costs. Project-based indirect costs include labor and benefits for shared services, plus rent, utilities, training, etc., and are applied against the effective rate (66%). Program-based indirect costs include program administration, GLRI financial management and reporting, and are applied against the total project costs (including project-based indirect costs).									
19. Employer/Tax ID No. 520852695		20. CAGE No: 347A4		21. ALC: 68-01-0727					
22. Statutory Authority for Transfer of Funds and Interagency Agreement Consolidated Appropriations Act, 2012; and Public Law 113-6					23. Other Agency Type Federal Agency				
24. Revise Reimbursable Funds and Direct Fund Cites (only complete if applicable)									
	Previous Funding		This Action		Amended Total				
Revise Reimbursable (in-house)					0				
Direct Fund Cite (contractor)					0				
Total					0				
Funds	Previous Amount		Amount This Action		Total Amount				
25. EPA Amount			\$27,677,397		\$27,677,397				
26. EPA In-Kind Amount					\$0				
27. Other Agency Amount					\$0				
28. Other Agency In-Kind Amount					\$0				
29. Total Project Cost			\$27,677,397		\$27,677,397				
30. Fiscal Information									
Treas. Symbol	DCN	FY	Appropriation	Budget Org	PRC	Object Class	Site/Project	Cost Org	Ob/De-Ob Amt
683/40108	1305HCX030	1314	B	05HK0	202BJ7XF1	2506			2,602,000
683/40108	1305HCX030	1314	B	05HK1	202BJ7XF1	2506			4,500,000
683/40108	1305HCX030	1314	B	05HK0	202BJ7XF2	2506			4,452,000

Fiscal (Continued)									
Treas. Symbol	DCN	FY	Appropriation	Budget Org	PRC	Object Class	Site/Project	Cost Org	Ob/De-Ob Amt
683/40108	1305HCX030	1314	B	05HK6	202BJ7XF2	2506	-	-	3,423,000
683/40108	1305HCX030	1314	B	05HK0	202BJ7XF3	2506	-	-	5,473,795
683/40108	1305HCX030	1314	B	05HK0	202BJ7XF4	2506	-	-	6,772,102
683/40108	1305HCX030	1314	B	05HK0	202BJ7XF5	2506	-	-	454,500
									27,677,397

EPA Form 1610-1 (Rev. 11-09). Previous editions are obsolete.

Part II - Approved Budget				EPA IAG Identification Number
				DW-96-95846801 - 0
31. Budget Categories	Itemization of All Previous Actions	Itemization of This Action	In-Kind Itemization of This Action	Itemization of Total Project Cost to Date
(a) Personnel		\$3,700,247		\$3,700,247
(b) Fringe Benefits		\$1,998,133		\$1,998,133
(c) Travel		\$114,890		\$114,890
(d) Equipment				\$0
(e) Supplies				\$0
(f) Procurement / Assistance		\$17,815,800		\$17,815,800
(g) Construction				\$0
(h) Other				\$0
(i) Total Direct Charges	\$0	\$23,629,070	\$0	\$23,629,070
(j) Indirect Costs:	\$0	\$4,048,327		\$4,048,327
Charged - Amount Rate: % Base: \$ Not Charged: Funds-Out: Not charged by Other Agency Estimate by other Agency Amount \$				
(k) Total (EPA Share 100.00 %) (Other Agency Share 0.00 %)	\$0	\$27,677,397	\$0	\$27,677,397
32. How was the IDC Base calculated?				
33. Is equipment authorized to be furnished by EPA or leased, purchased, or rented with EPA funds? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (Identify all equipment costing \$1,000 or more)				
34. Are any of these funds being used on extramural agreements? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Type of Extramural Agreement Contract				
Contractor/Recipient Name (if known)	Total Extramural Amount Under This Project		Percent Funded by EPA (if known)	
-	\$17815800.00 Total \$ 17,815,800.00		0	
Part III - Funding Methods and Billing Instructions				
35.	(Note: EPA Agency Location Code (ALC) - 68010727)			
<input checked="" type="checkbox"/> Disbursement Agreement	Request for repayment of actual costs must be itemized on SF 1080 and submitted to the Financial Management Office, Cincinnati, OH 45268-7002:			
<input type="checkbox"/> Repayment	<input type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> Upon Completion of Work			
<input checked="" type="checkbox"/> Advance	Only available for use by Federal agencies on working capital fund or with appropriate justification of need for this type of payment method. Unexpended funds at completion of work will be returned to EPA. Quarterly cost reports will be forwarded to the Financial Management Center, EPA, Cincinnati, OH 45268-7002.			
<input type="checkbox"/> Allocation Transfer-Out	Used to transfer obligational authority or transfer of function between Federal agencies. Must receive prior approval by the Office of Comptroller, Budget Division, Budget Formulation and Control Branch, EPA Hdqtrs. Forward appropriate reports to the Financial Reports and Analysis Branch, Financial Management Division, PM-226F, EPA, Washington, DC 20460.			
36. <input type="checkbox"/> Reimbursement Agreement	<input type="checkbox"/> Repayment <input type="checkbox"/> Advance			
<input type="checkbox"/> Allocation Transfer-In				
Other Agency's Billing Address (include ALC or Station Symbol Number)			Other Agency's Billing Instructions and Frequency	

Part IV - Acceptance Conditions

EPA Identification Number

DW-96-95846801 - 0

37. Terms and Conditions, when included, are located at the end of the 1610-1, or as an attachment.

Part V - Offer and Acceptance

Note: A) For Fund-out actions, the agreement/amendment must be signed by the other agency official in duplicate and one original returned to the Grants and IA Management Division for Headquarters agreements or to the appropriate EPA Regional IA administration office within 3 calendar weeks after receipt or within any extension of time that may be granted by EPA. The agreement/amendment must be forwarded to the address cited in item 29 after acceptance signature.

Failure to return the properly executed document within the prescribed time may result in the withdrawal of offer by EPA. Any change to the agreement/amendment by the other agency after the document is signed by the EPA Award Official, which the Award Official determines to materially alter the agreement/amendment, shall void the agreement/amendment.

B) For Funds-In actions, the other agency will initiate the action and forward two original agreements/amendments to the appropriate EPA program office for signature. The agreements/amendments will then be forwarded to the appropriate EPA IA administration office for signature on behalf of the EPA. EPA will return one original copy after acceptance returned to the other agency after acceptance.

EPA IA Administration Office (for administrative assistance)		EPA Program Office (for technical assistance)	
38. Organization/Address U.S. Environmental Protection Agency IASSC West 1200 Sixth Avenue, Suite 900, OMP-145 Seattle, WA 98101		39. Organization/Address US Environmental Protection Agency R5 - Region 5 77 West Jackson Blvd. Chicago, IL 60604-3507	
Award Official on Behalf of the Environment Protection Agency			
40. Digital signature applied by EPA Award Official Armina K. Nolan - Manager - Grants and Interagency Agreements Unit			Date 08/21/2013
Authorizing Official on Behalf of the Other Agency			
41. Signature	Typed Name and Title BG Margaret W. Burcham, Division Commander		Date 09/20/2013

GREAT LAKES RESTORATION INITIATIVE SCOPE OF WORK – FY 2013 FUNDS

AGENCY NAME: U.S. Army Corps of Engineers (USACE)

CONTACT INFORMATION: Jan Miller, (312) 353-6354, jan.a.miller@usace.army.mil

1. INTRODUCTION

The purpose of this Interagency Agreement (IA) is to provide funding to the U.S. Army Corps of Engineers (USACE) to help implement the priorities of the GLRI. Specifically, this IA will implement the Great Lakes Restoration Initiative Action Plan (GLRI) Action Plan, including priority programs, projects, and activities to protect, restore and maintain the Great Lakes ecosystem. This IA will also utilize the USACE to implement priorities, programs and projects of the Great Lakes Water Quality Agreement such as the Lakewide Action & Management Plans, the Remedial Action Plans for Areas of Concern, and the Cooperative Science and Monitoring Initiatives, among others.

The GLRI Action Plan identifies goals, objectives, measurable ecological targets, and specific actions for five focus areas—Toxic Substances and Areas of Concern; Invasive Species; Nearshore Health and Nonpoint Source Pollution; Habitat and Wildlife Protection and Restoration; and, Accountability, Education, Monitoring, Evaluation, Communication and Partnerships.

2. BUDGET AND PROJECT DETAIL

With Fiscal Year 2013 allocations, and with the funds transferred under this IA, the USACE will undertake actions within each of the five focus areas. The activities that the USACE will undertake under this IA, as set forth by the Templates in the table below will be conducted in accordance with Army and USACE planning and program requirements, applicable Federal laws, regulations, and policies, and upon approval by HQDA (Assistant Secretary of the Army (Civil Works)).

Focus Area		FY 2013 Amount
1. Toxic Substances and Areas of Concern		\$7,102,000
Template 2013-347	Strategic and Environmental Dredging	
Template 2013-365	Ashtabula Harbor	
Template 2013-399	Manistique Harbor	
Template 2013-146	USEPA Implementation of Area of Concern Program	
Template 2013-147	Developing Critical Information	
2. Invasive Species		\$7,875,000
Template 2013-114	Sea Lamprey Traps and Barriers	
Template 2013-122	Aquatic Plant Control	
Template 2013-670	Asian Carp Framework Projects	
3. Nearshore Health and Nonpoint Source Pollution		\$5,473,795
Template 2013-111	Great Lakes Tributary Model	
Template 2013-123	Regional Sediment Management	
Template 2013-341	Watersheds Restoration, Conservation and Management	

4. Habitat and Wildlife Protection and Restoration	\$6,772,102
Template 2013-325 Restoring Aquatic Ecosystems	
Template 2013-116 Beneficial Use of Dredged Material	
<i>Template 2013-130 Tribal Partnership Program</i>	
5. Accountability, Education, Monitoring, Evaluation, Communication, and Partnerships	\$ 454,500
Template 2013-121 Lake Ontario Adaptive Management (Northern International Boundary Waters Study & Surveillance)	
Template 2013-326 Capacity Building Support for LAMP Activities and Projects	
Total	\$27,677,397

**Italics indicate templates that are placeholders should additional FY13 GLRI funds become available.*

Fact sheets with more detailed schedules and milestones for each project under these Templates are available upon request from the applicable project contact, and will be updated regularly.

Subject to applicable Army authorities, regulations, policies, and any required approvals, the USACE will provide services that are necessary for restoration work, including contracts for contaminated sediment removal, stream and habitat restoration, and measures to prevent the migration of aquatic nuisance species. The duration of one or more of these contracts, up to and including final close-out of the contracts may extend beyond the project period of this IA.

The USACE has two types of indirect costs. The first are indirect costs that are associated with work on projects and includes personnel, and benefits for services shared by multiple projects (logistics, human resources, finance & accounting, etc) as well as physical costs (rent, utilities, training, etc). The rate for these project-related indirect costs (66%) is applied against the effective rate (labor plus benefits). The other indirect costs are for programmatic management and administration of GLRI activities by the Great Lakes & Ohio River Division. This indirect rate (1.0%) is applied against the total costs and was established from a preliminary estimate of the costs associated with programmatic activities, including program administration, GLRI financial management and reporting.

3. NARRATIVE SCOPE OF WORK

Toxic Substances and Areas of Concern

Template Number and Title: 2013-347 Strategic and Environmental Dredging

Funding: FY 2013 GLRI funding for this Template is as follows:

Strategic Navigation Dredging	\$500,000
Great Lakes Remedial Action Plans	900,000
Great Lakes Strategic Plan	100,000
Dredging Operations & Environmental Research	79,000
Administration	16,000
Total	\$1,595,000

Description: Under this Template, subject to applicable Army authorities, regulations, policies, and any required approvals, the USACE will implement projects and studies through several programs that support the restoration and delisting of Great Lakes Areas of Concern (AOCs). This includes initial planning of strategic navigation dredging projects, demonstration of innovative technologies for

managing sediments, and technical support to Remedial Action Plans. The authority, descriptions of work, milestones, and measures of progress for the major USACE programs are summarized below:

Points of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 111 N. Canal Street, Chicago, Illinois 60606-7205, (312) 353-6354, jan.a.miller@usace.army.mil The USACE POC will facilitate communications with the managers of individual projects and studies.

Strategic Navigation Dredging

Statutory Authority: The USACE has authority to operate and maintain Federal navigation channels, including periodic maintenance dredging of sediments within the authorized channel and allowable pay prisms and overdepths. The authority for each harbor/channel is unique, although most were authorized in Rivers and Harbors Acts on the late 1800's. Complete authorities for all Federal navigation projects in the Great Lakes are available in the Annual Report of the Secretary of the Army on Civil Works Activities.

Description of Work: This program will plan, design and implement projects to remove and properly dispose of contaminated sediments from areas within authorized Federal navigation channels and allowable pay prisms and overdepths to complement sediment remediation at Areas of Concern or other locations by Legacy Act or other remedial programs. This program will focus on the removal of contaminated sediments where there is a low to moderate priority for dredging for navigation purposes, but the removal provides high value in environmental outputs.

FY 2013 funds (\$500,000) will be used to continue or complete the feasibility evaluations for strategic dredging projects at Black Rock Channel, NY (Niagara River AOC), Lorain Harbor, OH (Black River AOC), and Duluth-Superior Harbor, MN/WI (St. Louis River AOC) in order to support the elimination of the dredging restriction BUI at these AOCs. The anticipated volume of contaminated sediments to be removed at each of these AOCs is between 50,000 and 100,000 cubic yards. In the case of the Black Rock Channel and Lorain Harbor projects, there is an existing confined disposal facility (CDF) that has been previously used for placement of dredged material from these navigation channels. The projected costs for these projects are both approximately \$3 million. If additional FY 2013 funds were available, they may be used for detailed design and preparation of plans and specs for these dredging projects subject to applicable Army authorities, regulations, policies and any required approvals.

Milestones: Provided is a listing of major milestones associated with projects under this program, presuming necessary approvals are obtained. Project completion may depend upon funding in subsequent years.

Project	Milestone	Schedule
Black Rock Channel & Tonawanda Harbor, NY (Niagara River AOC)	Initiate sediment sampling and analysis	June 2013
Black Rock Channel & Tonawanda Harbor, NY (Niagara River AOC)	Award dredging contract	February 2015
Lorain Harbor, OH (Black River AOC)	Initiate sediment sampling and analysis	July 2013
Lorain Harbor, OH (Black River AOC)	Award dredging contract	February 2015
Duluth-Superior Harbor, MN/WI (Howard's Bay, WI)	Initiate sediment sampling and analysis	August 2013
Duluth-Superior Harbor, MN/WI (Howard's Bay, WI)	Award dredging contract	TBD

Measures of Progress: Projects under this program will support implementation of several Toxics &

AOCs measures of progress, including: Measure 1.3.1 (Number of AOCs for which all management actions for delisting have been completed); Measure 1.3.2 (AOC BUIs removed), and; Measure 1.3.3 (Cubic yards of contaminated sediment remediated). FY13 funds will be used for the planning stages of projects and these measures of progress will only be realized as these projects are constructed with future funding.

Great Lakes Remedial Action Plans

Statutory Authority: Section 401(a), WRDA 1990, as amended

Description of Work: This program provides for planning, design and other technical assistance to state agencies and local interests to support the development and implementation of Remedial Action Plans (RAPs) at Great Lakes AOCs. Projects are conducted in cooperation with a non-Federal cost-sharing partner.

FY 2013 funds (\$900,000) will be used for technical support to states and local partners for planning and design of remedial measures required to eliminate BUIs at Great Lakes AOCs. RAP support may include, but is not limited to: planning and design of remedial options for the Zephyr site at the Muskegon Lake AOC; detailed design of remedial actions at several sites within the St. Louis River AOC; planning and design of restoration projects at Sterling and Harrington Drains at the Clinton River AOC; planning and design of the restoration of Burnham Canal at the Milwaukee Estuary AOC, and; planning and design or restoration projects at Hoyt Lake and Scajaquada Creek within the Niagara River AOC. If additional funds were available, they could be used to plan and design additional remedial actions at other AOCs.

Milestones: Provided is a listing of major milestones associated with projects under this program. The USACE typically allocates funding to AOCs on a first come, first served basis in order to encourage expeditious negotiation and execution of cost-sharing agreements with non-federal partners.

Project	Milestone	Schedule
Milwaukee Estuary AOC	Execute agreement and initiate RAP support	March 2013
Clinton River AOC	Execute agreement and initiate RAP support	July 2013
Muskegon AOC	Execute agreement and initiate RAP support	July 2013
St. Louis River AOC	Execute agreement and initiate RAP support	July 2013
Buffalo River AOC	Execute agreement and initiate RAP support	August 2013
Niagara River AOC	Execute agreement and initiate RAP support	August 2013
Maumee River AOC	Execute agreement and initiate RAP support	August 2013

Measures of Progress: Projects under this program will support implementation of several Toxics & AOCs and Habitat measures of progress, including: Measure 1.3.1 (Number of AOCs for which all management actions for delisting have been completed); Measure 1.3.2 (AOC BUIs removed); Measure 1.3.3 (Cubic yards of contaminated sediment remediated), and; Measure 4.3.7 (Acres of coastal, upland, and island habitats protected, restored and enhanced). FY13 funds will be used for the planning and design stages of projects and these measures of progress will only be realized as these projects are constructed with future funding.

Great Lakes Strategic Plan

Statutory Authority: Section 455(a) of the WRDA of 1999, as amended

Description of Work: This program provides for strategic planning to support decision making by federal, state, tribal and local governments on wide range of water resources issues in the Great Lakes. This effort will develop a comprehensive plan for remediation of contaminated sediments at Great Lakes sites, not limited to AOCs, including detailed estimates of costs and ecological benefits. The analyses will include consideration of available funding opportunities, including navigation as well as environmental programs.

FY 2013 funds (\$100,000) will be used to conduct initial investigations of potential dredging of contaminated sediments from navigation channels at AOCs coordinated with the EPA, including but not limited to the following AOCs: Cuyahoga River, St. Louis River, Menominee River, Detroit River, Clinton River, and Rouge River. The quantities of sediments are not known at this time. If a project is determined feasible, future funds may be used to plan and design the dredging project for implementation in FY 2014 or later years. A portion of this funding will be utilized for ERDC coordination of this study with the AOC Task Force.

Milestones: Provided is a listing of major milestones associated with this project.

Project	Milestone	Schedule
Cuyahoga River AOC	Complete initial evaluation	April 2014
Menominee River AOC	Complete initial evaluation	April 2014
Detroit River AOC	Complete initial evaluation	April 2014
Clinton River AOC	Complete initial evaluation	April 2014
Rouge River AOC	Complete initial evaluation	April 2014

Measures of Progress: Projects under this program will support implementation of several Toxics & AOCs measures of progress, including: Measure 1.3.1 (Number of AOCs for which all management actions for delisting have been completed); Measure 1.3.2 (AOC BUIs removed), and; Measure 1.3.3 (Cubic yards of contaminated sediment remediated). FY13 funds will be used for the planning stages of projects and these measures of progress will only be realized as these projects are constructed with future funding.

Dredging Operations & Environmental Research (DOER)

Statutory Authority: 10 U.S.C. 2358 authorized the Secretary of Defense or the Secretary of a military department to engage in basic research, applied research, advanced research, and development projects that are necessary to the responsibilities of such Secretary's department in the field of research and development.

Description of Work: This program provides for applied research relating to the navigation dredging and dredged material management. Subject to applicable Army authorities, regulations, policies and any required approvals, this program will be used to conduct investigations and demonstrations on innovative dredging and management techniques for contaminated sediments from Great Lakes AOCs.

With prior funding, approximately 40,000 cubic yards of contaminated sediments has been transported from the St. Louis River AOC to former strip mine sites in northern Minnesota where the sediments are being beneficially used for mine restoration through the creation of upland and wetland habitat. FY 2013 funds (\$79,000) will be used to continue monitoring of this demonstration project to determine the feasibility of this beneficial use technology. This demonstration of beneficial use of sediments could help

eliminate the dredging restriction BUI at the St. Louis River AOC.

Milestones: Provided is a listing of major milestones associated with projects under this program subject to compliance with statutory requirements and implementing regulations under 10 USC 2358, as well as obtaining necessary approvals. Project completion may depend upon funding in subsequent years.

Project	Milestone	Schedule
Duluth Mineland Restoration	Draft report	August 2014
Duluth Mineland Restoration	Final report	December 2014

Measures of Progress: This project is supporting implementation of several Toxics & AOCs measures of progress: Measure 1.3.1 – Number of AOCs for which all management actions for delisting have been completed. This project support management actions at the St. Louis River AOC. FY13 funding will be utilized to complete monitoring and a final report on the demonstration so that the technology demonstrated by this project might be utilized at other AOCs. Measure 1.3.2 – AOC BUIs removed. This project supports elimination of the dredging restrictions BUI by providing an alternative disposal method for moderately contaminated sediments.

Template Number and Title: 2013-365 Ashtabula – USACE Navigation Dredging

Funding: FY 2013 GLRI funding in the amount of \$4,000,000 is scheduled for the project under this template, which includes \$40,000 for administrative costs.

Statutory Authority: The USACE has authority to operate and maintain Federal navigation channels, including periodic maintenance dredging of sediments within the authorized channel and allowable pay prisms and overdepths. The authority for each harbor/channel is unique, although most were authorized in Rivers and Harbors Acts on the late 1800's. Complete authorities for all Federal navigation projects in the Great Lakes are available in the Annual Report of the Secretary of the Army on Civil Works Activities.

Description of Work: FY 2011 and 2012 funds were used to initiate construction of this project which will remove approximately 120,000 cubic yards of contaminated sediments from the Federal navigation channel at the Ashtabula Area of Concern (AOC) and dispose the sediments at an upland site coordinated with the Ohio EPA. FY 2013 funds will be used to modify the contract for construction of this project in order to address cost increases due to changed conditions at the project site. The bulk of the cost increase was due to the soil stability conditions at the disposal site which necessitated extensive dewatering and use of solidifying agents.

Milestones: Provided is a partial listing of milestones associated with projects under this program. Project completion may depend upon funding in subsequent years.

Project	Milestone	Schedule
Ashtabula Harbor, OH	Complete feasibility	April 2012
Ashtabula Harbor, OH	Award contract	August 2012
Ashtabula Harbor, OH	Complete construction	November 2013

Measures of Progress: This project will support Toxics Goal 5 (Cleanup and restoration of AOCs to restore BUIs) and indirectly support Goals 1-4. Activities under this program will support Toxics Objective 4 (remediation of 9.6 million cubic yards of contaminated sediments by 2014) and indirectly support Objectives 2, 3 and 5. Activities under this project will support Toxics Measure 4 through the removal and remediation of approximately 120,000 cubic yards of contaminated sediments from the

Ashtabula River AOC. This project also supports Toxics Measures 1, 2, and 3.

Point of Contact: Michael Asquith, USACE Buffalo District, 1776 Niagara Street, Buffalo, NY 14207-3199, (716) 879-4352, michael.asquith@usace.army.mil

Template Number and Title: 2013-399 Manistique Harbor

Funding: FY 2013 GLRI funding in the amount of \$500,000 is scheduled for the project under this template, which includes \$5,000 for administrative costs.

Statutory Authority: The USACE has authority to operate and maintain Federal navigation channels, including periodic maintenance dredging of sediments within the authorized channel and allowable pay prisms and overdepths. The authority for each harbor/channel is unique, although most were authorized in Rivers and Harbors Acts on the late 1800's. Complete authorities for all Federal navigation projects in the Great Lakes are available in the Annual Report of the Secretary of the Army on Civil Works Activities.

Description of Work: Under this Template, the USACE will coordinate with the USEPA and NOAA on their proposed removal of contaminated sediments and debris from the navigation channel and adjacent areas within the Manistique Area of Concern (AOC). This coordination will include: an evaluation of the feasibility of placement of dredged material at the Keweenaw CDF; technical review and input on dredging and disposal alternatives; sharing data on bathymetry and sediment quality; evaluation of the ability of potential actions to eliminate restrictions on future navigation dredging, and; other technical assistance that helps advance the removal of contaminated sediments and debris from the navigation channel.

Milestones: Provided is a listing of major milestones associated with projects under this program. Project completion may depend upon funding in subsequent years.

Project	Milestone	Schedule
Manistique Harbor, MI	Initiate coordination	January 2013

Measures of Progress: This project will support implementation of several Toxics & AOCs measures of progress: Measure 1.3.1 (number of AOCs for which all management actions for delisting have been completed); Measure 1.3.2 (AOC BUIs removed), and; Measure 1.3.3 (cubic yards of contaminated sediment remediated). This Template will provide technical assistance to the project led by NOAA that will realize these measures.

Point of Contact: Jon Imbrunone, USACE Detroit District, P.O. Box 1027, Detroit, MI 48231-1027 (313) 226-2156, jon.t.imbrunone@usace.army.mil

Template Number and Title: 2013-146 USEPA Implementation of Area of Concern Program

Funding: FY 2013 GLRI funding in the amount of \$800,000 is scheduled for the project under this template, which includes \$8,000 for administrative costs.

Description: Under this template, the USACE will conduct projects and studies that support the planning, design, and execution of critical management actions at Areas of Concern.

Points of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 111 N. Canal Street,

Chicago, Illinois 60606-7205, (312) 353-6354, jan.a.miller@usace.army.mil The USACE POC will facilitate communications with the managers of individual projects and studies.

St. Louis River AOC - Duluth-Superior Harbor Strategic Navigation Dredging

Statutory Authority: The USACE has authority to operate and maintain Federal navigation channels, including periodic maintenance dredging of sediments within the authorized channel and allowable pay prisms and overdepths. The authority for each harbor/channel is unique, although most were authorized in Rivers and Harbors Acts on the late 1800's. Complete authorities for all Federal navigation projects in the Great Lakes are available in the Annual Report of the Secretary of the Army on Civil Works Activities.

Description of Work: The USACE will implement a demonstration project in coordination with the Minnesota DNR and PCA to evaluate the impacts of in-water placement of dredged material at a site along the St. Louis River known as 21st Avenue Site and other locations selected in coordination with state agencies. This information gathered from this demonstration project will be critical to determine if additional placement of dredged material as part of a planned restoration project at the 21st Ave. site is environmentally acceptable. The USACE will use its base funding for the dredging and placement and will utilize GLRI funding to complete design of the demonstration, prepare and coordinate NEPA documents, and other coordination with state and local partners.

Milestones: Provided is a listing of major milestones associated with projects under this program. Project completion may depend upon funding in subsequent years.

Project	Milestone	Schedule
Duluth-Superior Harbor, MN/WI	Start dredging and placement	June 2013
Duluth-Superior Harbor, MN/WI	Complete dredging and placement	July 2015
Duluth-Superior Harbor, MN/WI	Final report	December 2015

Measures of Progress: This project will support implementation of several Toxics & AOCs measures of progress: Measure 1.3.1 (number of AOCs for which all management actions for delisting have been completed); Measure 1.3.2 (AOC BUIs removed), and; Measure 1.3.3 (cubic yards of contaminated sediment remediated). This demonstration will provide information critical to advancing future restoration projects that can deliver these measures.

Cuyahoga River AOC - Gorge Dam Removal Feasibility Analysis

Statutory Authority: Statutory Authority: Section 401(a), WRDA 1990, as amended

Description of Work: The USACE will enter into a cost-sharing agreement with the Ohio EPA for a feasibility-level evaluation of alternatives for managing contaminated sediments in conjunction with the potential removal or notching of the Gorge Dam on the Cuyahoga River. This effort will include: estimates of sediment volumes from existing information; evaluation of feasible methods of sediment removal, dewatering, and disposal; evaluation of dam removal options and construction sequencing; preliminary assessments of bank stability, groundwater and well impacts, and impacts to foundations of adjacent infrastructure; preliminary assessment of geotechnical properties of disposal sites and regulatory requirements, and; cost estimates of alternatives.

Milestones: Provided is a listing of major milestones associated with this project. Project completion may depend upon funding in subsequent years.

Project	Milestone	Schedule
Gorge Dam Feasibility Analysis	Start investigation	July 2013
Gorge Dam Feasibility Analysis	Draft feasibility report	February 2015

Measures of Progress: This project will provide the planning and design for a management action that is critical to the elimination of the BUI for degraded fish and wildlife habitat in the Cuyahoga River AOC. The project supports Measure 1.3.1 (number of AOCs for which all management actions for delisting have been completed) and Measure 1.3.2 (AOC BUIs removed).

Template Number and Title: 2013-147 Developing Critical Information.

Funding: FY 2013 GLRI funding in the amount of \$207,000 is scheduled for this Template, which includes \$2,000 for administrative costs.

Statutory Authority: 10 U.S.C. 2358 authorized the Secretary of Defense or the Secretary of a military department to engage in basic research, applied research, advanced research, and development projects that are necessary to the responsibilities of such Secretary's department in the field of research and development.

Description of Work: Caged fish will be used to monitor effects in areas of concern (AOC) in order to provide actionable information for delisting of AOC. The USACE coordinate with EPA collaborators in examining the health effects caused by waters in AOC on fathead minnows placed in cages at various AOC and conduct genetic analysis on tissues from exposed fish. EPA will conduct field studies, water chemistry, exposure of caged fish, dissection of fish, tissue chemistry and shipping of tissue samples to the USACE. Both EPA and USACE will collaborate on producing technical documentation describing the results of the work.

Milestones: Provided is a listing of major milestones associated with projects under this program. Project completion may depend upon funding in subsequent years.

Project	Milestone	Schedule
Effects-based monitoring with gene expression	Tissue samples provided to ERDC	May 2013
Effects-based monitoring with gene expression	Microarray analysis of gene expression in tissues	June 2013
Effects-based monitoring with gene expression	Report on health effects in fish exposed to AOC waters.	Sept 2013

Measures of Progress: This Template will support implementation of the following Toxics & AOCs measures of progress: Measure 1.3.1 (number of AOCs for which all management actions for delisting have been completed), and; Measure 1.3.2 (AOC BUIs removed). This Template will provide information critical to advancing future restoration projects that can deliver these measures at multiple AOCs.

Point of Contact: Anthony Friona, USACE, ERDC-EL-MS, c/o USACE Buffalo District, 1776 Niagara Street, Buffalo, NY 14207-3199, (716) 555-1476, anthony.friona@usace.army.mil

Invasive Species

Template Number and Title: 2013-114 Sea Lamprey Traps and Barriers

Funding: FY 2013 GLRI funding in the amount of \$4,200,000 is scheduled for projects under this template, which includes \$50,000 for administrative costs.

Statutory Authority: Section 1135, WRDA 1986, as amended; Section 506, WRDA 2000, as amended.

Description of Work: The USACE will plan, design and implement projects to construct barriers, traps and other devices that support the control or eradication of sea lamprey within the Great Lakes. Projects will be developed to control sea lamprey in the Great Lakes without the use of lampricides, which has some adverse environmental side-effects. Projects may include the development of low-head and inflatable dams to prevent the migration and spawning of sea lamprey in key tributaries. Projects may also include traps that support the capture of sea lamprey for elimination and/or sterilization and release. All projects are developed in consultation with the Great Lakes Fishery Commission and a cost-sharing, non-Federal partner.

FY 2013 GLRI funds (\$3,750,000) will be utilized to prepare final designs for construction of sea lamprey barrier projects on the Manistique River, MI, Grand River, OH, AuSable River, MI, and Muskegon River, MI and to initiate construction of one or more of these projects. FY 2013 GLRI funds (\$400,000) will be used to continue the planning and design of sea lamprey traps and barriers at eight other rivers.

Milestones: Provided is a listing of major milestones associated with the projects closest to construction. Milestones for other projects (not shown) will be developed after initial studies have been conducted. Project completion may depend upon funding in subsequent years.

Project	Milestone	Schedule
Manistique River, MI	Award construction contract	March 2014
Grand River, Harpersfield, OH	Award construction contract	September 2014
AuSable River, MI	Award construction contract	September 2014
Muskegon River, MI	Award construction contract	September 2014
E. AuGres River, MI	Award construction contract	February 2015
St. Mary's River, MI	Award construction contract	June 2015
Cheboygan River, MI	Award construction contract	August 2015

Measure of Progress: This Template supports implementation of the following Invasive Species measures of progress: Measure 2.3.2 (Acres managed for populations of invasive species controlled to a target level). This Template will prepare final design for 2-4 new barrier and/or traps for controlling the movement and spawning of sea lamprey and/or for trapping in order to prevent successful mating. This Template will also continue planning and design on 5-8 additional facilities. Funding will be used to initiate construction at the Manistique and/or Harpersfield projects. The acres impacted by these facilities are not known, although the Manistique River project alone should completely eliminate the sea lamprey population spawned from this River, estimated at 42,000 annually.

Points of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 111 N. Canal Street, Chicago, Illinois 60606-7205, (312) 353-6354, jan.a.miller@usace.army.mil The USACE POC will facilitate communications with the managers of individual projects and studies.

Template Number and Title: 2013-670 Asian Carp Framework Projects

Funding: FY 2013 GLRI funding is provided for this Template as follows:

Great Lakes-Mississippi River Interbasin Study	\$1,780,000
CSSC Dispersal Barrier	1,609,000
Administration	<u>34,000</u>
Total	\$3,423,000

Description: Under this Template, the USACE will implement projects and studies that support the Asian Carp Framework developed by the Asian Carp Regional Coordinating Committee, including activities associated with the construction, operation, and monitoring of the Chicago Sanitary and Ship Canal Dispersal Barrier project and the Great Lakes-Mississippi River Interbasin Study.

Points of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 111 N. Canal Street, Chicago, Illinois 60606-7205, (312) 353-6354, jan.a.miller@usace.army.mil The USACE POC will facilitate communications with the managers of individual projects and studies.

Great Lakes – Mississippi River Interbasin Study (GLMRIS)

Statutory Authority: Section 3061(d), WRDA 2007 (PL 110-114), Section 1538(b)(5) of the Moving Ahead for Progress in the 21st Century Act (MAP-21) (PL 112-141)

Description of Work: The USACE is conducting a comprehensive feasibility study of the range of alternatives for preventing the spread of aquatic nuisance species (ANS) between the watersheds of the Great Lakes and the Mississippi River through the Chicago Sanitary and Ship Canal and other aquatic pathways, including hydrological separation of the watersheds. This study is known as the Great Lakes and Mississippi River Interbasin Study (GLMRIS), or the “Interbasin Study”. GLMRIS is focusing on known and suspected hydraulic pathways connecting these watersheds, including, but not limited to the Chicago River, Chicago Sanitary and Ship Canal, Cal-Sag Channel, Calumet River, Little Calumet River, Grand Calumet River, Wabash River (Indiana), Fox River (Wisconsin), Miami & Erie Canal (Ohio), and the Ohio & Erie Canal (Ohio).

The study is examining alternatives that can prevent the transfer of a wide range of ANS in both directions. The study is being conducted in two focus areas in collaboration with other Federal agencies and with input from international, state, tribal, and nongovernmental stakeholders. Focus Area I considers the Chicago Area Waterway System (CAWS), and Focus Area II considers aquatic pathways outside the CAWS. One outside pathway, Eagle Marsh, has received immediate attention as a result of the study. There is an intermittent connection between the Wabash and Maumee River at Eagle Marsh near Ft. Wayne, Indiana. A temporary barricade has been constructed by the Indiana DNR with GLRI funding and more detailed planning of a permanent solution is underway under the leadership of the Natural Resources Conservation Service (NRCS).

In July 2012, Congress passed the Moving Ahead for Progress in the 21st Century Act (MAP-21). Section 1538 of MAP-21 directs the Secretary to expedite completion of the report for GLMRIS and if the Secretary determines a project is justified in the completed report, to proceed directly to project preconstruction engineering and design (PED). MAP-21 also directs the Secretary to complete the GLMRIS report within 18 months of enactment, and to submit an interim report to Congress within 90 days.

This new GLMRIS Report will provide Congress and other stakeholders an analysis of potential alternatives and additional pertinent information. USACE anticipates that the GLMRIS Report will identify additional requirements that must be completed after January 2014, but prior to initiating PED, including detailed design analyses, completion of the environmental compliance analysis, required internal reviews, and public and state/agency reviews. Work performed in Focus Area I is included in the

Asian Carp Control Strategy Framework as Action Item 2.4.2. The framework provides \$400,000 in FY2013 GLRI funds to complete the GLMRIS Report via five initiatives:

- Technology Evaluation (\$150K) – Funding is essential for evaluating risk reduction associated with implementation of alternatives. Additional funding is needed to fully support the GLMRIS Team in its development of conceptual design of alternatives for inclusion in the GLMRIS report.
- Environmental Compliance Documentation (\$100K) – Regulatory and environmental compliance documentation will be included in the GLMRIS report to provide a basis for future National Environmental Protection Act (NEPA) documentation. This information will assist with agency planning and decision making regarding any alternative that may be recommended for implementation.
- Risk Management Support (\$50K) – This will assist the GLMRIS Team in evaluating and assigning criteria to alternatives that support future decision making.
- Final Documentation of Conceptual Engineering Analyses and Costs (\$50K) – This will support compilation and integration of numerous datasets, information, and reports. Due to the volumes of data accumulated in GLMRIS, it will be essential to review the report for completeness, consistency, and accuracy.
- Continue Stakeholder Engagement and GLMRIS Website Support (\$50K) – This will be essential for keeping the lines of communication open with our stakeholders; funding will support final packaging and future roll-out of GLMRIS report.

Framework item 2.3.6 provides \$338,000 for feasibility level hydraulics and hydrological modeling and development of a gross appraisal for Eagle Marsh.

\$1,060,000 is provided in the Framework under action item 2.8.1 for the investigation of emergent technologies. Specific emerging technologies of interest include 1) investigations into the use of carbon dioxide as a fish deterrent, 2) the feasibility of utilizing chlorination in an open system (such as in a lock chamber), and 3) the continued investigation of hydro-acoustic fish deterrents. Enhancing the understanding of the implementability and effectiveness of these technologies may further refine consideration of these technologies in GLMRIS.

Milestones: Provided is a listing of major milestones associated with this study. Other milestones will be developed following completion of the feasibility study. Implementation of recommendations from this study will require separate authorization and funding.

Activity	Milestone	Schedule
Focus Area 2 Risk Characterization	Complete Aquatic Pathways Assessment Report	Completed
GLMRIS Feasibility Study	Complete GLMRIS Report	December 2013

Measure of Progress: This project supports the following Invasive Species measures of progress:

Measure 2.3.1 - Number of nonnative species newly detected in the Great Lakes ecosystem. This project will evaluate and compare feasible options for measures that might be implemented to prevent the transfer of invasive aquatic species through various waterway connections between the Great Lakes and Mississippi River Basins. The reduction to the number of nonnative species detected in the Great Lakes ecosystem is purely theoretical at this point.

Measure 2.3.2 - Acres managed for populations of invasive species controlled to a target level. This project may lead to multiple actions at several locations to control the movement of nonnative species. The acres impacted by these potential actions are not known, but the scale is on the order of large

watershed systems.

Chicago Sanitary & Ship Canal Dispersal Barriers

Statutory Authority: Section 126, Energy & Water Development Appropriations Act of 2010 (PL 111-85); Section 3061, WRDA 2007 (PL 110-114); Section 105, Energy & Water Development Appropriations Act of 2012

Description of Work: The Chicago Sanitary and Ship Canal (CSSC) is a man-made waterway that connects the Chicago River and Des Plaines River, creating the only continuous waterway connection between the Great Lakes and Mississippi River basins. The dispersal barrier system was developed to prevent the spread of invasive fish species between these watersheds. It includes the construction and operation of a set of three electrical barriers, known as Barriers I, IIA, and IIB. A Demonstration Dispersal Barrier (Barrier I) was constructed and has been operating in the CSSC since 2002. A permanent electric barrier (Barrier II), with a design life of 20 years, was implemented in two independent stages (A & B). Barrier IIA is constructed and has been operational since April 2009. Construction of Barrier IIB was completed in February 2011, and was activated in April 2011. Barrier IIA was placed in warm standby. Design of a permanent Barrier I facility was initiated in FY 2011, and the first construction contract was awarded in FY 2012.

USACE is conducting a study of a range of options and technologies for reducing impacts of hazards that may reduce the efficacy of the barriers, known as the Efficacy Study. Four Interim Efficacy Study reports have been completed. The Interim I report showed that during flood events, flows from the neighboring Des Plaines River and Illinois & Michigan Canal could provide fish a bypass route around the barriers. Construction of measures to reduce the risk of these bypasses was completed in October 2010 with funding from the Great Lakes Restoration Initiative. The Interim IIA report summarized laboratory research and safety tests completed to identify and recommend Barrier II's optimum operating parameters. These operating parameters were implemented at Barrier IIB in October 2011. The Interim III report recommended installation of screens on sluice gates at the O'Brien Lock & Dam. These screens were installed in January 2011. The Interim IIIA report identified a demonstration acoustic bubble strobe dispersal barrier as another possible tool for preventing Asian carp from establishing in the Great Lakes. A comprehensive report is scheduled for completion in FY2013.

FY 2013 GLRI funding will be utilized to implement the following elements of the interagency Asian carp Framework: 2.3.3, 2.6.1 and 2.6.3.

Tagged Fish Research to Test Barrier Effectiveness. Monitoring results indicate the presence of Asian carp eDNA upstream of the barrier in several locations.. Potential pathways must be identified and evaluated, including the possibility that some fish may be moving through the barrier, although laboratory tests indicate that the barrier is effective. Preliminary work using tagged common carp was conducted by the Illinois Natural History Survey and University of Illinois to determine if the Demonstration Barrier was able to prevent fish from moving across. Additional research by USACE with over 6 million detections of 238 tagged fish indicates no tagged fish have crossed the barrier toward Lake Michigan. Framework item 2.3.3 includes \$200,000 to continue this research.

eDNA Transition to USFWS. Framework item 2.6.1 provides \$125,000 to transition responsibility for the coordination and execution of the eDNA monitoring program from USACE to the US Fish and Wildlife Service.

eDNA Calibration (ECALS) and Probabilistic Model. eDNA analysis is an emerging and cutting edge science for predicting the presence and tracking the movement of Asian carp through a waterway. To further validate its use as an effective tool, its methodology must be further refined and its analysis

capacity increased. The main purpose of ECALS is to improve the application of eDNA methodology to assess and manage uncertainty. ECALS will investigate alternate sources of Asian carp DNA, improve existing genetic markers and investigate the relationship between the number and distribution of positive eDNA samples with the density of Asian carp populations. The results of this study will allow project managers to better interpret eDNA results, as well as investigate ways to make the eDNA process more efficient (decrease processing time and cost). Framework item 2.6.3 includes \$1,300,000 for this study.

Milestones: Provided is a listing of major milestones associated with this project. This project has numerous other milestones associated with tasks to be implemented with the USACE' base funding.

Activity	Milestone	Schedule
Steel Hulled Barges Study	Study complete	September 2013
eDNA Transition	Finalize Transition of Operations	July 2013
Vector Analysis	Conceptual model complete	August 2013
eDNA Calibration	Report complete	June 2013

Measure of Progress: This project supports the following Invasive Species measures of progress:

Measure 2.3.1 - Number of nonnative species newly detected in the Great Lakes ecosystem. This project has established facilities to prevent the transfer of invasive aquatic species through the Chicago Area Waterways between the Great Lakes and Mississippi River Basins. The reduction to the number of nonnative species detected in the Great Lakes ecosystem resulting from this project is unknown. In addition to the creation of the electrical barriers, this project has greatly advanced the science and technology of invasive species barriers and monitoring. These advances are being applied at other pathways to and from the Great Lakes.

Measure 2.3.2 - Acres managed for populations of invasive species controlled to a target level. This project has created facilities to manage the movement of nonnative species through a major pathway between the Great Lakes and Mississippi River Basins. The acreage managed is far larger than the acres of the Chicago Area Waterways themselves.

Template Number and Title: 2013-122 Aquatic Plant Control

Funding: FY 2013 GLRI funding in the amount of \$252,000 is scheduled for this Template, which includes \$2,000 for administrative costs.

Statutory Authority: Section 104, Rivers and Harbors Act of 1958, as amended; Sections 103(c)(6) and 941, WRDA 1986, as amended.

Description of Work: Through the Aquatic Plant Control Research Program, the USACE is developing technologies for the management of non-indigenous aquatic plant species. The program provides effective, economical, and environmentally compatible methods for assessing and managing problem aquatic plants. *Phragmites australis*, common reed, is an aggressive, native, 8-16 foot tall, coarse perennial grass which frequently grows in the moist soils of tidal and non-tidal wetlands, choking out other vegetation including cattails, bulrushes and sedges. At present, the only practical method for controlling moderate to large populations of *Phragmites* is the use of herbicide. Under this program, the USACE is conducting demonstrations on a variety of controls against *Phragmites* and other invasive plants at selected AOCs. Given the recent infestations of Hydrilla within the Great Lakes Basin, the USACE is investigating potential projects to evaluate and demonstrate technologies for eradication and control of this invasive aquatic plant.

FY 2013 GLRI funding will be used to continue or initiate full-scale demonstration projects that evaluate a series of techniques for eradication of Phragmites. Previous GLRI funding was used to initiate a demonstration project at Times Beach, Buffalo, NY within the Niagara River AOC. FY 2013 funds may be used to continue or initiate demonstration projects at Walnut Beach, Ashtabula, OH (within the Ashtabula River AOC) and Burnham Prairie, IL (adjacent to the Grand Calumet River AOC). These demonstration projects will be fully coordinated with the USGS and other Federal agencies. FY 2013 funds may also be used to continue an investigation of methods for addressing the invasive aquatic plant, Hydrilla which was recently discovered near the Niagara River. If additional funding were available, additional demonstration projects and studies on aquatic plant controls could be initiated.

Milestones: Provided is a listing of construction start milestones associated with this program. Milestones for other projects (not shown) will be developed following additional coordination with partner agencies. Project completion may depend upon funding in subsequent years.

Project	Construction Start	Measures of Progress
Times Beach Demonstration, Buffalo, NY	October 2012	31 acres of invasive species managed at Niagara River AOC
Walnut Beach Demonstration, Ashtabula, OH	July 2013	26 acres of invasive species managed at Ashtabula River AOC
Burnham Prairie Annex Demonstration, Cook County IL	July 2013	35 acres of invasive species managed at site along Grand Calumet River and adjacent to AOC
Cayuga Creek Hydrilla Study, NY	NA	prevent migration of invasive species to Niagara River

Measure of Progress: This project supports measures of progress for Invasive Species and Toxics and AOCs: Measure 2.3.2 (acres managed for populations of invasive species controlled to a target level) and Measure 1.3.1 (number of AOCs for which all management actions for delisting have been completed). The acres managed and AOCs involved are listed on the above table. FY13 funds will be used to continue the project at Times Beach and initiate the project at Walnut Beach.

Point of Contact: Anthony Friona, USACE, ERDC-EL-MS, c/o USACE Buffalo District, 1776 Niagara Street, Buffalo, NY 14207-3199, (716) 555-1476, anthony.friona@usace.army.mil The USACE POC will facilitate communications with the managers of individual studies.

Nearshore Health and Nonpoint Source Pollution

Template Number and Title: 2013 - 111 Great Lakes Tributary Model

Budget: FY 2013 GLRI funding in the amount of \$101,000 is provided for this Template, which includes \$1,000 for administration.

Statutory Authority: Section 516(e), WRDA 1996, as amended

Description of Work: Tributary models developed under this program are being developed to assist state and local resource agencies with the evaluation and planning of measures for soil conservation and non-point source pollution prevention. The ultimate goal of this program is to support state and local measures that will reduce the loading of sediments and pollutants to tributaries, thereby reducing the need for, and costs of navigation dredging and promoting actions to delist Great Lakes AOCs. The program is being implemented in close coordination with the Great Lakes states. Individual tributary models are

developed in partnership with representatives of agencies and organizations from the watershed, including Soil and Water Conservation Districts, Remedial Action Plans committees, municipal and regional planning agencies, navigation interests, state and federal resource agencies. These partnerships guide the scope and focus for the model to meet individual watershed needs. Completed models are being used by local, state and federal agencies for watershed and ecosystem planning, forestry management, navigation maintenance planning, and water quality compliance evaluations. State and county agencies are also using models to identify the most effective locations for buffer strips or wetland restoration projects and assess impacts of urban sprawl on sedimentation. In addition to models for individual tributaries or sub-watersheds, the USACE is developing in cooperation with several universities a web-based tool that can be used by any local resource agency in the Great Lakes Basin to do support watershed planning at smaller tributaries and sub-basins.

Prior GLRI funding was used to estimate of the rate of sediment deposition in the federal navigation channel at the mouth of the Maumee River in Toledo, OH. FY13 funds will be used to develop estimates of sedimentation rates at other priority watersheds, including the Fox and Saginaw Rivers. These sedimentation rates are an important GLRI metric that is used to evaluate the combined impacts of GLRI-funded actions on soil conservation within these priority watersheds.

Milestones: Provided is a listing of major milestones associated with this project. This project has numerous other milestones associated with tasks to be implemented with the USACE' base funding.

Project	Milestone	Schedule
Toledo Harbor sedimentation estimates	Complete sedimentation rate estimates (FY11 funding)	September 2013
Saginaw Harbor sedimentation estimates	Initiate evaluation of sedimentation estimates (FY12 funding)	June 2013
Saginaw Harbor sedimentation estimates	Complete sedimentation rate estimates (FY13 funding)	September 2014
Fox River/Green Bay Harbor sedimentation estimates	Initiate evaluation of sedimentation estimates (FY14 funding)	February 2014

Measures of Progress: This Template is supporting the following measure of progress for Nearshore Health and Nonpoint Source Pollution:

Measure 3.3.5 - Annual volume of sediment deposition in defined harbor areas in targeted watersheds. This Template is developing a methodology for estimating Measure 3.3.5 (rate of sediment deposition at Toledo Harbor) under various scenarios of soil conservation within the Maumee River watershed. This tool will help guide future GLRI investments within this priority watershed. This Template is also extending this methodology to two other harbors that are within priority watersheds (Fox River and Saginaw River).

Points of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 111 North Canal Street, Chicago, IL 60606-7205, (312) 353-6354, jan.a.miller@usace.army.mil

Template Number and Title: 2013 - 123 Regional Sediment Management

Budget: No FY 2013 GLRI funding is scheduled for this Template. This is a placeholder should additional GLRI funds become available.

Statutory Authority: Section 2037 of the WRDA of 2007

Description of Work: The USACE will conduct studies, modeling and outreach to evaluate and promote practices for the management of sediments in the nearshore environment of the Great Lakes in a manner that integrates shore erosion protection, coastal habitat protection and restoration, and navigation dredging. The Regional Sediment Management (RSM) program enables the USACE to develop RSM Plans to evaluate alternatives for the long-term management of sediments dredged from multiple navigation projects in conjunction with state or regional coastal needs and objectives, such as Lakewide Management Plans and Coastal Zone Management Plans. The program has supported development of regional tools that promote sustainable dredging practices, like beneficial use.

If additional FY 2013 GLRI funds were available, they could be used for outreach to inform stakeholders on the opportunities for beneficial use of dredged material as an alternative to open water placement or confined disposal. The expansion of beneficial use of sediments with low levels of contaminants at AOCs could help eliminate the Dredging Restrictions BUI.

Milestones: Milestones will be established for specific projects should funding become available.

Measures of Progress: This Template is a placeholder should additional funds become available. The Template could support objectives for Nearshore/Nonpoint and the measure of progress for the Habitat and Toxics/AOCs Focus Areas:

Measure 4.3.7 - Acres of coastal, upland, and island habitats protected, restored and enhanced. This Template could support the protection, restoration, and enhancement of coastal habitat by promoting beneficial use of dredged sediments for coastal habitat restoration.

Measure 1.3.2 – AOC BUIs removed. This Template could support elimination of the dredging restrictions BUI at AOCs where residual levels of sediment contamination are restricting dredging by promoting beneficial use alternatives from dredged sediments.

Points of Contact: Craig Forgette, USACE Buffalo District, 1776 Niagara Street, Buffalo, NY 14207-3199, (716) 879-4187, craig.m.forgette@usace.army.mil The USACE POC will facilitate communications with the managers of individual studies.

Template Number and Title: 2013 - 341 Watersheds Restoration, Conservation and Management

Budget: FY 2013 GLRI funding in the amounts shown below are scheduled for these programs.

Dredged Material Management Facilities	0
Coastal Resources Restoration Projects	5,020,000
Coastal Structures Habitat Enhancement	300,000
Watershed Studies	0
Administration	52,795
Total	\$5,372,795

The USACE will implement projects and studies through several programs that support the conservation, restoration, and management of watersheds using a holistic approach which integrates ecological, economic and societal needs. The authority, descriptions of work, milestones, and measures of progress for the major USACE programs are summarized below:

Points of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 111 North Canal Street, Chicago, IL 60606-7205, (312) 353-6354, jan.a.miller@usace.army.mil. USACE POC will facilitate communications with the managers of individual projects and studies.

Dredged Material Management Facilities

Statutory Authority: Section 201, WRDA 1996, as amended. Complete authorities for all Federal navigation projects in the Great Lakes are available in the Annual Report of the Secretary of the Army on Civil Works Activities.

Description of Work: This program is a placeholder should additional funds become available and a suitable project is identified. The USACE plans, designs, and constructs facilities for the management of sediments dredged from Federal navigation channels that are determined to be not suitable for unrestricted disposal. In some cases, these facilities (known either as Dredged Material Disposal Facilities – DMDFs, or Confined Disposal Facilities – CDFs) are intended for permanent disposal of contaminated sediments. Sediments dredged from a several Legacy Act projects have been placed in these facilities. In a few cases, the location and design of these facilities has been fashioned to protect and/or restore valuable coastal wetlands and aquatic habitat.

Previous GLRI funding was used in conjunction with the Corps' base funding to construct the DMDF for Green Bay Harbor, which is within the Fox River/Lower Green Bay AOC. The location and design of the DMDF was configured to restore a chain of islands in Green Bay known as Cat Island and restore over 1,200 acres of coastal wetland habitat that was lost due to shoreline erosion. The construction of the DMDF at Green Bay will provide capacity for confining 2.35 million cubic yards of contaminated sediments from the Fox River/Green Bay AOC. No additional GLRI funding is required for the Green Bay project, but the USACE is investigating other AOCs where the construction of a new DMDF might be required. These include the Cuyahoga River and Grand Calumet River/Indiana Harbor Canal AOCs.

Milestones: Milestones will be developed should a project be identified and funding become available.

Measures of Progress: This program is a placeholder should additional funds become available and a suitable project identified. Development of a DMDF within an AOC could support Nearshore/Nonpoint Goal 1 (nearshore aquatic communities consist of healthy, self-sustaining plant and animal populations dominated by native species) and Toxics/AOCs Goal 1 (Areas of Concern are cleaned up, restoring the areas and removing the beneficial use impairments).

Coastal Resources Restoration Projects

Statutory Authorities: Section 206, Flood Control Act 1958, as amended; Section 1135, WRDA 1986, as amended; Section 206, WRDA 1996, as amended; Section 506, WRDA 1999, as amended; Sections 2037, 3089, 3180, and 4071, WRDA 2007 (PL 110-114). 10 U.S.C. 2358 authorized the Secretary of Defense or the Secretary of a military department to engage in basic research, applied research, advanced research, and development projects that are necessary to the responsibilities of such Secretary's department in the field of research and development.

Description of Work: The USACE will plan, design, and implement projects to protect and restore nearshore and coastal aquatic resources, including beaches, islands, and nearshore habitat. FY 2012 GLRI funding is being used to initiate construction of the Rosewood Park project. FY 2013 GLRI funding will be used to continue construction of the Rosewood Park, IL project and initiate construction of one or more other projects. Funds will also be used to continue or complete planning and design of other projects that restore, protect or enhance the coastal and nearshore aquatic ecosystems, including, but are not limited to projects listed under Milestones. If additional funds become available, construction could be initiated of another project.

Milestones: Provided is a listing of construction award milestones associated with projects under this

program. Milestones for other projects (not shown) will be developed following additional coordination with non-Federal partners. Project completion may depend upon funding in subsequent years.

Project	Construction Award Date	Measures of Progress
Rosewood Park, IL	September 2013	5 acres of beach, dune, ravine, and bluff habitat along Lake Michigan shoreline
Port Clinton Coastal, OH	July 2014	20 acres of coastal wetlands along Lake Erie shoreline
Lake County Ravine #8, IL	August 2014	2 acres of riparian and wetland habitat along Lake Michigan shoreline
Illinois Beach State Park, IL	September 2014	6.5 miles of ridge, dune, and swale habitat along Lake Michigan shoreline
Jeorse Park Beach, IN	April 2015	44 acres of riparian and nearshore habitat along Lake Michigan shoreline in Grand Calumet River AOC
Ft. Sheridan, IL	July 2015	250 acres of dune, bluff, ravine, and lake habitat along Lake Michigan shoreline
Zion Beach and Ridge, IL	July 2015	up to 3,000 acres of riparian and nearshore habitat along Lake Michigan shoreline
Jackson Park, IL	September 2015	107 acres of lake, marsh and savannah habitat along Lake Michigan shoreline
Millard Park, IL	July 2016	14 acres of beach, dune, ravine, and bluff habitat along Lake Michigan shoreline
Keweenaw Stamp Sands, MI	TBD	protect nearshore habitat by preventing contaminated sands from eroding into Lake Superior
Morgan Shoals, IL	TBD	148 acres of nearshore estuary habitat along Lake Michigan shoreline

Measures of Progress: This program will support Nearshore/Nonpoint Goal 1 (nearshore aquatic communities consist of healthy, self-sustaining plant and animal populations dominated by native species). This program also supports measures of progress for the Habitat Focus Area.

Measure 4.3.7 - Acres of coastal, upland, and island habitats protected, restored and enhanced. Funds will be used to continue construction of the Rosewood Park project and could be used to initiate construction of one or more of the other projects identified above. The acres of habitat that are being, or could be restored are identified for each project. These measures will be realized upon completion of construction.

Coastal Structures Habitat Enhancement

Statutory Authority: 10 U.S.C. 2358 authorized the Secretary of Defense or the Secretary of a military department to engage in basic research, applied research, advanced research, and development projects that are necessary to the responsibilities of such Secretary's department in the field of research and development.

Description of Work: Within the Great Lakes, the USACE has over 130 miles of coastal structures, including breakwaters, piers and jetties, designed to provide safe haven for navigation. These structures also provide protection to urban waterfronts from coastal forces and ice flows. These structures can provide valuable, reef-like habitat to Great Lakes fisheries and be an important component of the coastal ecosystem. The USACE will conduct studies and demonstration projects to evaluate low-cost alternatives

for increasing the nearshore habitat value of these structures to fisheries and other aquatic life as part of periodic maintenance, repairs or replacement of these structures.

FY 2011 and 2012 GLRI funds were used to demonstrate the enhancement of nearshore aquatic habitat at the Cleveland Harbor and Ashtabula Harbor breakwaters. FY 2013 GLRI funds will be used to continue these demonstrations. Subject to applicable Army authorities, regulations, policies and any required approvals, another demonstration project may be implemented with FY 2013 GLRI funds at Milwaukee Harbor, WI.

Milestones: Provided is a listing of major milestones associated with projects under this program subject to compliance with statutory requirements and implementing regulations under 10 USC 2358, as well as obtaining necessary approvals. Milestones for other projects (not shown) will be developed following additional coordination with non-Federal partners. Project completion may depend upon funding in subsequent years.

Project	Milestone	Schedule
Cleveland Harbor breakwater habitat enhancement demonstration Phase 1	Construction completed	May 2012
Cleveland Harbor breakwater habitat enhancement demonstration Phase 2	Construction completed	May 2013
Ashtabula Harbor breakwater habitat enhancement demonstration	Initiate construction (FY13 funds)	August 2013
Milwaukee Harbor breakwater habitat enhancement demonstration	Initiate construction (FY13 funds)	May 2014

Measures of Progress: This program will support Nearshore/Nonpoint Goal 1 (nearshore aquatic communities consist of healthy, self-sustaining plant and animal populations dominated by native species). This program also supports measures of progress for the Habitat Focus Area.

Measure 4.3.7 - Acres of coastal, upland, and island habitats protected, restored and enhanced. FY 2013 funds will be used to continue monitoring of the coastal habitat enhancement project at Cleveland Harbor and initiate construction of one additional demonstration project. Each project will enhance the fishery habitat in 100-250 lineal feet of breakwater. However, the value of this nearshore habitat will be realized by fish within a radius of more than 15 miles from the breakwater.

Watershed Studies

Statutory Authorities: Section 102, Rivers and Harbors Act of 1966, as amended; Sections 729 and 905(b), WRDA 1986, as amended; Section 202, WRDA 2000, as amended; Sections 4047 and 4059, WRDA 2007

Description of Work: The USACE has numerous authorities for conducting planning studies related to the development, use, conservation, restoration, and management of water resources. Watershed studies are a collaborative process where the USACE supports state, local and tribal governments in a structured process for evaluating a wide range of water resources alternatives to meet economic, ecological and societal needs. It is an open process for facilitating sustainable decisions regarding shared water resources, with participation by nongovernmental stakeholders. Alternatives are identified and evaluated with ample consideration of their positive and negative impacts from economic, ecological and societal viewpoints.

No FY 2013 GLRI funding is assigned to watershed studies. If additional funding were available, it could be used to continue or complete watershed studies for the Black River, OH and Finger Lakes, NY.

Priority will be placed on completing watershed studies that support the delisting of AOCs and/or support nonpoint goals at priority watersheds.

Milestones: Milestones will be established for studies if funding becomes available.

Measures of Progress: This is a placeholder for watershed studies, should additional funding become available. Watershed studies could support Nearshore/Nonpoint Goal 6 (high quality, timely and relevant information about the nearshore areas is readily available to assess progress and to inform enlightened decision making) as well as contributing to Goals 1, 2 and 5. These studies could evaluate the feasibility of projects and actions that support Nearshore/Nonpoint Interim Objective 2 (remediation, restoration and conservation actions in at least one targeted watershed in each Great Lake basin will control erosion, reduce nutrient runoff from urban and agricultural sources, and improve habitat to protect nearshore aquatic resources). Watershed studies could also support Toxics/AOCs Goal 5 (health and integrity of wildlife populations and habitat are protected).

Habitat and Wildlife Protection and Restoration

Template Number and Title: 2013 - 325 Restoring Aquatic Ecosystems

Funding: FY 2013 GLRI funding in the amounts shown below are scheduled for these programs. Anticipate that the distribution between GLFER and Section 206 and 1135 programs may change as projects can be readily converted from one program to another for various reasons.

Great Lakes Fishery & Ecosystem Restoration	\$4,150,000
Aquatic Ecosystem Restoration (Section 206)	2,000,000
Environmental Improvements (Section 1135)	50,000
Other Habitat Restoration Programs	200,000
Administration	69,102
Total	\$6,469,102

The USACE has a number of authorities to plan, design, and construct projects that protect, restore, and enhance aquatic ecosystems, restore fishery passages on tributaries that are blocked by dams or other obstructions, and provide planning assistance to states and local interests related to habitat conservation, protection and restoration. The authority, descriptions of work, milestones, and measures of progress for the major USACE programs are summarized below:

Points of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 111 North Canal Street, Chicago, IL 60606-7205, (312) 353-6354, jan.a.miller@usace.army.mil The USACE POC will facilitate communications with the managers of individual projects and studies.

Great Lakes Fishery & Ecosystem Restoration (GLFER)

Statutory Authority: Section 506, WRDA 2000, as amended

Description of Work: The GLFER program is the USACE' primary, regional authority for restoration of aquatic ecosystems in the Great Lakes. Projects are developed in cooperation with a non-Federal cost-sharing partner, reviewed and ranked by an advisory group from the Council of Lake Committees with support from the Great Lakes Fishery Commission. GLFER projects support the implementation of the Joint Strategic Plan for Management of Great Lakes Fisheries and some are located in AOCs and support the implementation of RAPs.

FY 2013 GLRI funding will be used to continue or complete construction of restoration contracts initiated with prior GLRI funding: Calumet & Ivanhoe, IN; Burnham Prairie, IL; Orland Perimeter, IL; Northerly Island, IL, and; Frankenmuth Fishery Passage, MI. FY 2013 funds will be used to continue planning and design of the projects listed below and if additional funding becomes available may be used to initiate construction of one or more of these projects.

Milestones: Provided is a listing of construction award milestones associated with projects under this program that have already started construction (dates prior to October 2012), could be constructed with FY 2013 GLRI funding (dates between October 2013 and July 2014), or could be constructed with 2014 funds (dates after October 2013). Milestones for other projects (not shown) will be developed following additional coordination with non-Federal partners. Project completion may depend upon funding in subsequent years.

Project	Construction Award Date	Measures of Progress
Burnham Prairie, IL	July 2011	93 acres of ridge, swale, and pond habitat
Calumet Prairie/Ivanhoe South, IN	September 2011	180 acres of woodland, sand prairie and marsh habitat in Grand Calumet River AOC
Orland Tract Perimeter, IL	September 2011	275 acres of wet prairie and oak savannah
Chicago Botanical Gardens, IL	September 2011	6,400 feet of riparian and lacustrine habitat
Little Calumet Riparian, IN	September 2012	43 acres of wetlands and bottomland hardwood habitat
Northerly Island, IL	September 2012	40 acres of aquatic habitat on island along Lake Michigan shoreline
Frankenmuth Dam Fish Passage, MI	September 2013	75 miles of fishery access on tributary to Saginaw AOC
Lake County Ravine #8, IL	August 2014	5 acres of ravine, dune, and swale habitat on Lake Michigan shoreline
Underwood Creek, WI	September 2014	5,000 feet of riparian habitat on tributary to Milwaukee Estuary AOC
Lye Creek, OH	October 2014	8 miles of restored riparian habitat in Maumee River watershed
Menominee and Park Mill Dams, MI/WI	December 2014	bypass 2 barriers to restore 15 miles of river habitat access for lake sturgeon within Menominee River AOC
Elkhart River & Christiana Creek, IN	January 2015	remove 2 barriers to restore 30 miles of fishery access in tributary to St. Joseph River
Jeorse Park Beach, IN	April 2015	44 acres of riparian and nearshore habitat along Lake Michigan shoreline in Grand Calumet River AOC
Boardman River Dams, MI	June 2015	remove or modify up to 3 dams to restore 17 miles of fishery access
Hegewich Marsh, Chicago, IL	June 2015	130 acres of marsh, wet prairie and river channel in Calumet region
Powderhorn Lake, IL	July 2015	192 acres of ridge, swale, and lacustrine habitat

Saganaskee Slough, IL	July 2015	809 acres of marsh, fen, oak savannah, and lacustrine habitat
Springville Dam, NY	July 2015	34 miles of fishery access on Cattaraugus Creek
Wolf Lake, IL	July 2015	658 acres of lacustrine habitat less than a mile from Lake Michigan and adjacent to Grand Calumet River AOC
Euclid Creek Spillway, OH	July 2015	restore fishery access to 18 miles of river within Cuyahoga River AOC
Sauk Lake Dam, IL	September 2015	restore fishery access to 6 miles and 1,050 acres of riparian habitat on Thorn Creek
Ottawa River, OH	September 2015	restore 18 acres of wetland and riparian habitat at former industrial site within the Maumee River AOC
Ambler Flats, IN	September 2015	351 acres of meadow and forested wetlands near Michigan City, IN
Jackson Park, IL	September 2015	107 acres of marsh, lake, and savannah habitat along Lake Michigan shoreline
Deep River, IN	September 2015	restore fishery access to 8 miles of East Arm of Little Calumet River
Bonnie Brook, IL	TBD	34 acres of riparian habitat along Waukegan River upstream of AOC

Measures of Progress: This program supports measures of progress under the Habitat and Toxics/AOCs Focus Areas: Measure 4.3.1 (Miles of rivers reopened for fish passage); Measure 4.3.2 (Number of fish passage barriers removed or bypassed); Measure 4.3.6 (Number of acres of wetlands and wetland-associated uplands protected, restored and enhanced); Measure 4.3.7 (Acres of coastal, upland, and island habitats protected, restored and enhanced), and; Measure 1.3.2 (AOC BUIs removed). The first seven projects listed in the table above are under construction, or completed, and the measures shown are fully or partially realized. FY13 funds may be used to initiate construction of additional projects and continue planning and design on the remainder and others (not listed). Measures (acres) will not be fully realized until project construction is substantially completed, which may require future funding.

Aquatic Ecosystem Restoration

Statutory Authority: Section 206, WRDA 1996, as amended

Description of Work: This program is a national, continuing authority for the planning, design and construction of aquatic ecosystem restoration projects. Projects are developed in cooperation with a non-Federal cost-sharing partner. Some projects are located within AOCs and support the elimination of BUIs.

FY 2012 GLRI funds will be used to initiate construction of the Horner Park project. FY 2013 GLRI funding will be used to continue the construction of the Horner Park project, planning and design of projects listed below. If additional funds become available, construction may be initiated at one or more projects.

Milestones: Provided is a listing of construction award milestones for projects under this program that could be constructed with FY 2013 or FY 2014 GLRI funding. Milestones for other projects (not shown) will be developed following additional coordination with non-Federal partners. Project completion may depend upon funding in subsequent years.

Project	Construction Award Date	Measures of Progress
Horner Park, IL	September 2013	14 acres of riparian habitat on North Branch of Chicago River
Menomonee River, WI	July 2014	3,700 feet of riparian habitat along Menomonee River within Milwaukee Estuary AOC
Little Cuyahoga River, OH	October 2014	4,000 feet of riparian habitat on tributary to Cuyahoga River AOC
Pike River, WI	April 2015	90 acres of riparian habitat along 1.2 mile reach of state priority tributary
Kinnickinnic River, WI	June 2015	5,800 feet of riparian habitat on tributary to Milwaukee Estuary AOC

Measures of Progress: This program supports measures of progress under the Habitat and Toxics/AOCs Focus Areas: Measure 4.3.1 (Miles of rivers reopened for fish passage); Measure 4.3.2 (Number of fish passage barriers removed or bypassed); Measure 4.3.6 (Number of acres of wetlands and wetland-associated uplands protected, restored and enhanced); Measure 4.3.7 (Acres of coastal, upland, and island habitats protected, restored and enhanced), and; Measure 1.3.2 (AOC BUIs removed). The measures shown for each project in the table above will not be realized under the project is constructed. FY13 funds will be used to initiate construction of 1-2 projects and continue planning and design on the remainder and others (not listed). Measures (acres) will not be fully realized until project construction is substantially completed, which may require future funding.

Environmental Improvements

Statutory Authority: Section 1135, WRDA 1986, as amended

Description of Work: This program is a national, continuing authority for the planning, design and construction of aquatic ecosystem restoration projects at locations where the ecosystem has been impacted by a USACE project. Projects are developed in cooperation with a non-Federal cost-sharing partner. Some projects are located within AOCs and support the implementation of RAPs.

FY 2013 GLRI funding will be used to continue planning and design of projects listed below.

Milestones: Provided is a listing of construction award milestones for projects under this program that could start construction with FY 2013 or FY 2014 GLRI funds. Milestones for other projects (not shown) will be developed following additional coordination with non-Federal partners. Project completion may depend upon funding in subsequent years.

Project	Construction Award Date	Measures of Progress
Smokes Creek, NY	February 2015	3 miles of riparian corridor and stream restoration for native fish on tributary to the Niagara River AOC

Measures of Progress: This program supports measures of progress under the Habitat and Toxics/AOCs Focus Areas: Measure 4.3.1 (Miles of rivers reopened for fish passage); Measure 4.3.2 (Number of fish passage barriers removed or bypassed); Measure 4.3.6 (Number of acres of wetlands and wetland-associated uplands protected, restored and enhanced); Measure 4.3.7 (Acres of coastal, upland, and island habitats protected, restored and enhanced), and; Measure 1.3.2 (AOC BUIs removed). The measures shown for each project in the table above will not be realized under the project is constructed. FY13

funds will be used to continue planning and design on the projects.

Other Habitat Restoration Programs

Statutory Authorities: 10 U.S.C. 2358; Section 103, Estuary Restoration Act of 2000, as amended (PL 106-457, Title I); Section 216, Flood Control Act of 1970, as amended; Section 206, Flood Control Act of 1958, as amended; Section 125, PL 109-103. 10 U.S.C. 2358 authorized the Secretary of Defense or the Secretary of a military department to engage in basic research, applied research, advanced research, and development projects that are necessary to the responsibilities of such Secretary's department in the field of research and development.

Description of Work: The USACE has numerous project-specific authorities for the planning, design and implementation of projects for the protection and restoration of aquatic ecosystems. In addition, the USACE has programs that have been used to provide technical support to states and RAP groups on habitat restoration alternatives, design, and costs. FY 2013 GLRI funding will be used to provide technical support on aquatic habitat restoration to RAP groups, EPA, and other stakeholders. Support includes evaluation of delisting criteria for AOCs, providing workshops on habitat restoration to AOCs, and direct support to a limited number of AOC groups relating to BUI delisting. FY 2013 funds may also be used to plan, design, and construct restoration projects including Lake Michigan Waterfront, IN, Flint River, MI, and Burnham Park Coastal, IL.

Milestones: Provided is a listing of major milestones associated with projects under this program. Milestones for other projects will be developed following additional coordination with non-Federal partners. Project completion may depend upon funding in subsequent years.

Project	Milestone	Schedule
AOC Habitat Restoration Tech Support	Muskegon River delisting support	July 2013
AOC Habitat Restoration Tech Support	Clinton River delisting support	November 2013

Measures of Progress: Projects under this program will provide technical assistance that supports implementation of several Toxics & AOCs and Habitat measures of progress, including: Measure 1.3.1 (Number of AOCs for which all management actions for delisting have been completed); Measure 1.3.2 (AOC BUIs removed); Measure 1.3.3 (Cubic yards of contaminated sediment remediated), and; Measure 4.3.7 (Acres of coastal, upland, and island habitats protected, restored and enhanced). FY13 funds will be used for planning and design assistance and these measures of progress will only be realized projects developed through this assistance are constructed with future funding.

Template Number and Title: 2013 - 116 Beneficial Use of Dredged Material

Funding: FY 2013 GLRI funding in the amount of \$303,000 is scheduled for projects under this template, which includes \$3,000 for administrative costs.

Statutory Authority: Section 2037, WRDA 2007 (PL 110-114).

Description of Work: This program will be used to plan, design and construct projects for the protection, restoration, and enhancement of wetlands and aquatic habitat using dredged material from the construction, operation and maintenance of Federal navigation projects. Projects may involve strategic placement of dredged sediments, construction of disposal facilities to protect or enhance habitat, and plantings of native species. Beneficial use projects are implemented in collaboration with non-Federal

cost-sharing partners.

FY 2013 GLRI funds will be used to accelerate feasibility evaluations of two projects in order to enhance the opportunity for their construction under the Corps' base funding program. These projects are for beneficial use of dredged material from Duluth-Superior Harbor, MN/WI and Illinois Beach State Park, IL.

Milestones: Provided is a partial listing of construction award milestones associated with projects under this program subject to compliance with statutory requirements and implementing regulations under 10 USC 2358, as well as obtaining necessary approvals. Project completion may depend upon funding in subsequent years.

Project	Construction Award Date	Measures of Progress
Illinois Beach State Park, IL	December 2013	45 acres of aquatic habitat restored with capacity for 200,000 cubic yards of sediments from the Waukegan Harbor AOC
21 st Avenue West, Duluth, MN	December 2015	30 acres of aquatic habitat restored with capacity for 200,000 cubic yards of sediments from the St. Louis River AOC

Measures of Progress: This program supports measures of progress for the Habitat and Toxics/AOCs Focus Areas: Measure 4.3.7 (Acres of coastal, upland, and island habitats protected, restored and enhanced) and Measure 1.3.2 (AOC BUIs removed). FY13 funds will be used to continue planning and design of the projects listed above. These measures will be realized as the projects are constructed with future funding.

Points of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 111 North Canal Street, Chicago, IL 60606-7205, (312) 353-6354, jan.a.miller@usace.army.mil The USACE POC will facilitate communications with the managers of individual projects.

Template Number and Title: 2013 - 130 Tribal Partnership Program

Funding: No FY 2013 GLRI funding is scheduled for this Template. This is a placeholder should additional GLRI funds become available.

Statutory Authority: Section 203, WRDA 2000, as amended

Description of Work: Under this program, the USACE will assist Native American Indian Tribes in studies to determine the feasibility of projects for flood damage reduction, environmental restoration and protection, and preservation of cultural and natural resources on tribal lands. If justified, studies conducted under this program may lead to projects constructed under existing or project-specific authorizations. This program is fully coordinated with the Department of Interior and other Federal agencies.

No FY 2013 GLRI funds are currently scheduled for this Template. If additional GLRI funding were available, it could be used to initiate feasibility studies in partnership with one or more of the following tribes: Bad River Band (wetlands restoration planning and design); Minnesota Chippewa Tribe (study causes for decline in wild rice in Cedar Lakes and potential remedies); Minnesota Chippewa Tribe (Fond du Lac Creek stream fish habitat restoration); Onondaga Nation (potential dam removal to restore Onondaga Creek).

Milestones: No FY 2013 funding is scheduled. Milestones will be developed should any additional GLRI funds become available for used by this Template.

Measures of Progress: This Template is a placeholder should additional funding become available. This Template could support the following Habitat measures, if funded: Measure 4.3.1 (Miles of rivers reopened for fish passage); Measure 4.3.2 (Number of fish passage barriers removed or bypassed); Measure 4.3.6 (Number of acres of wetlands and wetland-associated uplands protected, restored and enhanced), and; Measure 4.3.7 (Acres of coastal, upland, and island habitats protected, restored and enhanced).

Points of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 111 North Canal Street, Chicago, IL 60606-7205, (312) 353-6354, jan.a.miller@usace.army.mil The USACE POC will facilitate communications with the managers of individual projects.

Accountability, Education, Monitoring, Evaluation, Communication and Partnerships

Template Number and Title: 2013 – 121 Lake Ontario Adaptive Management (Northern International Boundary Waters Surveillance & Monitoring)

Budget: FY 2013 GLRI funding in the amount of \$252,500 is scheduled for this Template, which includes \$2,500 for administrative costs.

Statutory Authority: The USACE has general authority to coordinate with other water resources agencies as part of its overall Civil Works mission. This includes coordination with U.S. and Canadian agencies in relation to the implementation of the Boundary Waters Treaty and Great Lakes Water Quality Agreement.

Description of Work: The Great Lakes have lost about 60 percent of its total original wetlands resources. The degradation of sensitive wetland resources, within the Lake Ontario-St. Lawrence River system, has been exacerbated as a result of outflow regulation practices over the past 50 years. This project will enable stemming and potential reversal of coastal wetlands degradation through the development of an adaptive management (AM) approach to managing the outflows of Lake Ontario while continuing to provide benefits to other interests. The approach requires development/enhancement of strategic environmental elements which can be used to monitor change and, when necessary, prescribe water level regulation actions to address changing conditions. Subsequent management actions (governance) will be derived to limit or reduce negative impacts or take advantage of opportunities to enhance benefits. The evaluation of present and future scientific uncertainties will also be addressed. The resulting monitoring, analysis and adaptive management program will effectively tackle present and future wetland degradation.

Building on previous work, this effort will develop monitoring and modeling capability that can be used to guide adaptive management practices by the IJC St. Lawrence River Board of Control which can be used to regulate water outflows from Lake Ontario for environmental sustainability. The results of this monitoring will be used in conjunction with an ecosystem impacts model to evaluate the effects of water management decisions. This Template supports implementation of the Boundary Waters Treaty of 1909.

The tasks identified within this scope of work were formulated independently, but in conjunction with efforts presently being undertaken by the Boards of the International Joint Commission (IJC) to develop a structured methodology for adaptation of existing and future lake water level regulation practices. It is anticipated that the resulting changes in regulation practices will ultimately promote more variety in

wetland function and species creating a more productive and robust coastal ecology. This work is being coordinated with companion studies conducted by New York State, Environment Canada, the Lake Ontario LAMP and The Nature Conservancy.

FY 2013 GLRI funds will be used to develop a broader framework for incorporation of Adaptive Management into the evaluation and regulation of the Lake Ontario. The modeling tools developed in the previous year will be utilized to assess ecosystem response with both the existing Plan for a baseline and the proposed Plan for enhancements. Funding will also be used to continue the evaluation of the impacts of high and low levels resulting from regulation and assist in evaluation of extreme trigger points.

Milestones: Provided is a listing of major milestones associated with this Template. Project completion may depend upon funding in subsequent years.

Milestone	Schedule
Complete monitoring and analysis of wetlands	June 2013
Complete evaluations of hydroclimatic triggers and extreme water levels	September 2013
Initiate database framework for information management system	October 2013
Begin implementation of adaptive management in regulation decisions	May 2014

Measures of Progress: The Template supports Accountability Goal 1 (a cooperative monitoring and observing system provides a comprehensive assessment of the Great Lakes ecosystem). This Template will also support Habitat Measure 4.3.6 (number of acres of wetlands and wetland-associated uplands protected, restored and enhanced). The realization of this measure will be achieved long-term through the use of the monitoring system for adaptive management.

Points of Contact: Deborah Lee, USACE Great Lakes & Ohio River Division, 550 Main Street, Cincinnati, OH 45202-3222, (513) 684-3070, deborah.h.lee@usace.army.mil

Template Number and Title: 2013 – 326 Capacity Building Support for LAMP Activities and Projects

Funding: FY 2013 GLRI funding in the amount of \$202,000 is scheduled for this Template, which includes \$2,000 for administrative costs.

Statutory Authority: The USACE has general authority to coordinate with other water resources agencies as part of its overall Civil Works mission. This includes coordination with U.S. and Canadian agencies in relation to the implementation of the Boundary Waters Treaty and Great Lakes Water Quality Agreement.

Description of Work: The USACE will support Great Lakes lakewide teams in the implementation of Lakewide Action & Management Plans (LAMPs) and their associated goals, objectives and targets for Lakes Superior, Michigan, Huron, Erie and Ontario. This work includes participation in LAMP processes, programs, conferences, workshops and projects, including the development of LAMP documents, and updates. Specifically, USACE staff would participate in and serve on workgroup and technical committees, including attending meetings and workshops as necessary. USACE will also participate in Management-level meetings and committees as appropriate. The USACE will also utilize funding from this Template to support participation in the committees established under the Great Lakes Water Quality Agreement, including committees dealing with habitat, invasive, species, Areas of Concern, and LAMPs.

Milestones: LAMP support will be a continuing effort with milestones established through individual LAMPs for each Great Lake.

Measures of Progress: This Template supports measure 5.3.2 (number of priority LAMP projects completed) through enhanced USACE coordination with LAMP committees and greater integration of USACE capabilities with LAMP priority projects. Funds will be used for participation in meetings and technical support to LAMP and GLEC committees. Completion of LAMP priority projects will be realized with future funding.

Points of Contact: Jan Miller, USACE Great Lakes & Ohio River Division, 111 North Canal Street, Chicago, IL 60606-7205, (312) 353-6354, jan.a.miller@usace.army.mil The USACE POC will facilitate communications with the team leads associated with each LAMP.

4. COLLABORATIVE ARRANGEMENTS

For the majority of restoration projects, the USACE executes cost-sharing agreements with non-federal partners, including states, municipal governments, tribes, and non-profit organizations. These include agreements for cost-sharing studies, technical assistance, and feasibility investigations as well as agreements for design and construction. The terms of these agreements are determined by the specific authority for the project and USACE policies and procedures. For some projects that do not have cost-sharing requirements, but do require lands, easements or rights-of-way, the USACE enters into real estate or right-of-entry agreements with landowners.

The USACE receives the majority of its planning, design, and construction support through contracts with the private sector. In some cases, the USACE may receive support from universities through contracts. The USACE does receive support from other federal agencies through interagency agreements. These include support from the Geological Survey for data collection and from Fish and Wildlife Service for project coordination.

5. FUNDING SUMMARY SPREADSHEET

Attached is a tabular summary of the funding for this Scope of Work.

